

Objectives:

Previous papers and articles have presented applications of the High Reliability Organization (HRO) research base in industry and government (ex., LaPorte & Consolini, 1991; Roberts, 1993; Roberts, 2009; Weick & Stuclicke, 2007) and in education (Stringfield, 1995) the context of 25 British secondary schools in three Local Education Authorities (LEAs, Reynolds, Stringfield & Schaffer, 2006), and 5-year follow-up in one (LEA, Stringfield, Reynolds & Schaffer, 2008). The current paper extends the follow-up analyses to the full 25 school, three LEA original sample, and presents three additional years of sustainability data. Results are discussed in terms of HRO principles, prior school reform research, and the conditions required to sustain and extend-after-intervention change-bearing educational reform.

Perspectives / Theoretical Framework:

The majority of secondary school reform programs have produced at-best marginal evidence of positive multi-year outcomes on students (see Borman, Hewes, Rachuba, & Brown, 2003; What Works Clearinghouse, n.d.). Evidence of reform program sustainability is equally rare (Fullan, 2005; Hargreaves & Fink, 2006;). In a study of the implementation and effects of diverse reform designs, Datnow, Borman, Author, Rachuba, and Castellano, (2003) found that fewer than half of participating schools continued implementing their reforms after four years. Evidence of sustained gains in student outcomes as a result of intervention is particularly scarce. In an age of accountability, such a situation presents many challenges.

High Reliability Organization (HRO) theory contrasts clearly with virtually all organizational behavior models in that they build from continuous improvement, trial-and-error models. HRO researchers began with the observation that all developed societies have functions that must operate on the relatively new criterion of “trials-without-errors,” or, more exactly, trials with no errors that cascade to unacceptable conclusions. Nuclear power plants, air traffic control, and medical operating theatres in highly litigious societies are three examples of social organizations charged with operation of thousands of trials with virtually no cascading errors (Roberts, 2009; Weick & Stuclicke, 2007). In this paper, characteristics of HROs are discussed (LaPorte & Consolini, 1991; Roberts, 1993; High Reliability Organization International Conference, 2006, 2007). This will be followed by an effort to put an HRO-based reform into schools in three British LEAs.

Methods

Sample: Thirteen English secondary schools in two LEAs and twelve Welsh secondaries in 1 LEA began implementing the HRS project in 1997. In one Northern English case, the five initial schools were joined by all the other secondary schools in that relatively large LEA. Throughout, their results are contrasted with the English and Welsh averages / average gains on the nations’ GCSEs.

Measures and data sources: The core outcome measure throughout the HRS project and follow-up has been the national General Certificate of Secondary Education tests, or simply the GCSEs. Virtually every British student sits for the GCSEs at age 15 or 16.

The traditional measure of strong academic performance for a student is obtaining “5 or more A*’s to C” grades on the various examinations.

Starting three years before the intervention, a total of 14 years of GCSE scores will be presented for each school. These school-level analyses will be contrasted to trends in Welsh and English national data over the same years. All GCSE data were gathered from the Welsh and English national data warehouses, which are available for downloading on the web.

Additional, qualitative school-level case study data were gathered during the three years of initial implementation of the HRS project.

Results and Conclusions

1. In the two LEAs that had highest levels of implementation of the HRS principles, long-term gains greatly exceeded national gains. In both the northern English and the Welsh LEAs, the 11-year gains more than doubled their respective national average gains.
2. While general HRO principles were constant across high-gain schools and LEAs, the actual processes toward achieving fidelity of implementation was almost completely site specific. Schools co-constructed (Datnow & Stringfield, 2000) their routes toward achieving reform reliability.
3. The schools achieving greatest gains learned from each other. They often discussed, “the little things that matter” within and across schools.
4. A final practical conclusion of the HRS project is that reformers should attend not simply to the validity of their premises, but to the reliability of reform implementation.
5. Most studies of educational reform are discontinued after two to four years. In this study, some of the more dramatic effects were observed in years four to eleven, suggesting the importance of long-term follow-up studies of diverse reforms.